Appendix B: Technical Documentation

Overview

The following documentation outlines the analysis and evaluation process for the data submitted by MCOs which includes HEDIS®, CAHPS®, and Department-specified Rule H-2009-03 measures. Department-specified Rule H-2009-03 measures were developed by the Department in cooperation with the MCOs. These measures are not found in a national measurement set such as HEDIS®.

In this report HEDIS® and CAHPS® data were subject to two different types of statistical analyses: point-in-time analysis and trend analysis, both of which are described below. The Department-specified Rule H-2009-03 measures were analyzed with respect to Department-required performance levels, and were not subject to any statistical tests.

For both point-in-time and over-time analyses, rates are only publically reported when the sample size is greater than or equal to thirty and significance testing occurs only when sample size is greater than or equal to one hundred. The threshold of one hundred for significance testing was selected to ensure enough "statistical power" exists to detect a difference. When sample sizes are very small, it is possible to not find a significant difference when, in fact, a difference exists but can only be detected with a larger sample.[1]

Summary table of public rate reporting and significance testing

Measure Sample	Measure Rate Reporting	Point-In-Time / Over-Time Testing
<30	NO	NO
<100	YES	NO
≥100	YES	YES

Point-in-Time Analysis

For point-in-time analysis, MCO data for the current reporting year are compared to the applicable New England regional and national HEDIS® and CAHPS® rates, as reported by NCQA. This year, MCO (without PPO) experience is compared to the "*All Lines of Business minus PPO*" national and New England regional averages. All PPO experience is compared to NCQA's "*PPO-only*" national and New England regional averages. When a reported measure has a sample size of less than thirty, it is not publically reported and no analyses are conducted.

For point-in-time analyses, two separate criteria are to be met:

[1] Cohen, J. (2013). *Statistical power analysis for the behavioral sciences*. Routledge Academic.

1. Statistical significance – an MCO's measure is statistically significantly different from the New England regional and/or national average at the $p \leq 0.05$ level utilizing an exact binomial test of proportions (two-tail test)
2. Practical significance – an MCO's measure that is at least four percentage points different from the standard against which the performance is being evaluated

For example, an MCO may have a rate of 94.25%, which is considered statistically significantly different from the average rate of 90.45% (rule one), but would not meet the practical significance test (rule two) because the rate differential is 3.80 percentage points (less than the required four percentage point difference). As such, this measure would be classified as not significant. Practical significance testing is designed to identify differences that a reader would find important, and eliminate statistically significant differences that might be so small that the reader would find them immaterial.

Additional Evaluation

Opportunity for Improvement

When evaluating MCO's data against national and New England regional averages, two criteria are used to identify improvement opportunities for HEDIS® and CAHPS® measures:

1. The MCO's rate is significantly (statistically and practically significantly) worse than the better of the national or regional average
2. Both MCO's rate and the better of the national or regional average are below 50%.

For most Department-specified Rule 9-03 measures, MCOs are expected to achieve a 90% performance level.

High Performance

Measures noted for high performance are not subjected to significance testing. MCO measures are designated as having high performance (represented by a star symbol within tables) when the reported rate is at or above the ninety-fifth percentile of the better of the national or New England region averages. For example, if an MCO's reports a rate of 90% and the national ninety-fifth percentile is 85% and the New England ninety-fifth percentile is 87%, the measure would be considered a high performer and receive a star within the reporting table. On the other hand, if an MCO reports a rate of 93% and the national ninety-fifth percentile is 90%, but the New England region ninety-fifth percentile is 96%, the measure would not be considered a high performer and would be subject to significance testing.

Over-Time Analysis

MCO performance over time compares data filing measures within the current reporting year to data filings reported two years prior (e.g. 2014 data submission is compared to 2012 data submission). Over-time analysis requires, at minimum, two elapsed time periods with no significant changes in measurement methodology over these time periods. Not all measures are good candidates for statistical analysis over a span of years because:

- the population meeting the measurement criteria is too small to generate reliable rates;
- the measurement specifications have changed significantly over time; or
- there is no earlier data point, as is the case with first-year measures.

Statistical testing for over-time measures utilize a Pearson exact chi-square test or a Fisher's exact test in instances when cells have less than five observations. For all statistical testing, measures are considered statistically significant at the $p \leq 0.05$ level. No practical significance test is applied to the change-over-time measures.

Symbol Use and Acronyms: Members' Experience of Care - CAHPS® Survey and MCO Performance on Quality Measures

The following symbols and acronyms are used to communicate MCO performance for parts **three and four** of the report:

Symbol/ Acronym	Interpretation	Definition
★	High Performer	Plan rate is greater than or equal to the 95th percentile benchmark
▲	Better	**Point-In-Time**: means that the MCO's point-in-time score is better than the national or regional average by a statistically and practically significant amount. **Over-Time**: means that there is a statistical significant improvement when comparing the MCO's current and historic score.
○	Similar	**Point-In-Time**: means that there is no significant difference between the MCO's point-in-time score and the national or regional average. **Over-Time**: means that there is no statistical significant difference when comparing the MCO's current and historic score.
▼	Worse	**Point-In-Time**: means that the MCO's performance is worse than the national or regional average by a statistically and practically significant amount. **Over-Time**: means that there is a statistical significant decrease when comparing the MCO's current and historic score.
N/A	Not Applicable	Significance testing is not applicable when the sample size in the reporting year is less than one hundred or when historical data is missing
⊗	Opportunity For Improvement	**Point-In-Time**: MCOs are considered to have an opportunity for improvement when either significance testing is below the national/regional average OR the rate is less than fifty percent.
N/R	Not Reported	Rates are not reported when sample sizes are less than 30

Symbol Use and Acronyms: Analyses of MCO Performance Over-Time

The following symbols and acronyms are used to communicate MCO performance for part five of the report:

Symbol/ Acronym	Interpretation	Definition
★	High Performer	If the MCO's rate is above 90% in the base year, it is included in the high performing category, as it is difficult for an HMO's or PPO's rate to improve beyond 90%.
▲	Better	**Over-Time**: means that there is a statistically significant improvement when comparing the MCO's current and historic score.
○	Similar	**Over-Time**: means that there is no statistical significant difference when comparing the MCO's current and historic score.
▼	Worse	**Over-Time**: means that there is a statistically significant decrease when comparing the MCO's current and historic score.
N/R	Not Reportable	The HMO, POS, or PPO must have had a reportable rate in the baseline reporting year and in the current reporting year for a measure to be considered in the analysis.